

Amendments to the Claims:

Please amend the claims to read as follows, and cancel the claims indicated as cancelled without prejudice:

1. (Currently Amended) An in-vivo system comprising:

an autonomous in vivo device for traversing lumens having different diameters, said device comprising:

an outer shell comprising an optical window;

an illumination source and an imager positioned behind an optical window, the imager imaging via the optical window and the illumination source providing illumination via the optical window; and

a light detector receiving reflected light not via the optical window;

~~the illumination source and the light detector positioned relative to the outer shell such that level of light emitted from the illumination source, reflected from lumen walls, and incident on the light detector, is less when the lumen walls are relatively close to said outer shell; and~~

a processor to, ~~based on light received at the detector,~~ determine the movement of the in-vivo device ~~[[from]]~~ between a first lumen having a first diameter to a second lumen having a second diameter wherein the lumen walls are closer to the outer shell when the device is in the one of the first lumen and the second lumen, based on the light detector detecting less light in the lumen where the lumen walls are closer to the outer shell.

2. (cancelled).

3. (cancelled).

4. (previously presented) The system according to claim 1, wherein the first diameter is a relatively small diameter lumen and wherein the second diameter is a larger diameter.

5. (cancelled).

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6. (cancelled).
7. (Original) The system according to claim 1, wherein said detector is selected from the group consisting of: a CMOS, a CCD and a photodiode.
8. (cancelled).
9. (cancelled).
10. (cancelled).
11. (cancelled).
12. (cancelled).
13. (cancelled).
14. (cancelled).
15. (Original) The system according to claim 1, comprising a controller, wherein said controller is configured to receive signals from said detector and to trigger an event to occur within said in-vivo device.
16. (Original) The system according to claim 1 comprising a transmitter.
17. (cancelled).
18. (withdrawn) A method for locating an autonomous in vivo device for traversing lumens having different diameters, the method comprising, in an autonomous in-vivo device comprising an outer shell, an illumination source, and a light detector receiving reflected light, the illumination source and the light detector positioned relative to the outer shell such that level of light emitted from the illumination source, reflected from lumen walls, and incident on the light detector, is less when the lumen walls are relatively close to said outer shell:
 - illuminating a body lumen wall using the illumination source;
 - receiving light reflected from the body lumen wall at the light detector; and
 - determining, based on light received at the detector, the movement of the in vivo device from a lumen having a first diameter to a lumen having a second diameter.
19. (cancelled).

20. (withdrawn) The method according to claim 18, wherein said determining comprises comparing reflected light to a predetermined threshold.
21. (withdrawn) The method according to claim 20, wherein said comparing comprises comparing the quantity of said reflected light to a predetermined threshold.
22. (withdrawn) The method according to claim 18, comprising sending a signal if a movement is determined, to a unit selected from the group consisting of: a reception unit, a processing unit and an operator unit.
23. (withdrawn) The method according to claim 18, comprising initiating an event if there is a change in said reflected light according to a comparison to a pre-determined threshold.
24. (cancelled).
25. (cancelled).
26. (cancelled).
27. (cancelled).
28. (cancelled).
29. (cancelled).
30. (cancelled).
31. (previously presented) The system according to claim 1, wherein the in-vivo device is a swallowable in-vivo device traversing the gastrointestinal tract and wherein the lumens are organs of the gastrointestinal tract.
32. (previously presented) The system according to claim 1, wherein the light detector is placed at a location on said outer shell.
33. (currently amended) The system according to claim 38 wherein the ~~primary~~ first light source illuminates a body lumen for imaging said body lumen with said imager and wherein the ~~dedicated~~ second light source illuminates ~~[[a]]~~ body lumens for determining the movement of the in vivo device with the imager ~~said light detector~~.
34. (cancelled).
35. (withdrawn) The method according to claim 18, wherein the illumination source is a dedicated light source, the device comprising a primary light source and an imager.

36. (withdrawn) The method according to claim 35, comprising:

using the primary light source to illuminate a body lumen for imaging said body lumen with said imager; and

using the dedicated light source to illuminate a body lumen for determining the movement of the in vivo device with said light detector.

37. (withdrawn) The method according to claim 35, wherein the device comprises an optical window, wherein the primary light source and the imager are positioned behind the optical window, the method comprising using the imager to image via the optical window and using the primary light source to provide illumination via the optical window, the light detector receiving light not via the optical window.

38. (New) An in-vivo system comprising:

an autonomous in vivo device for traversing lumens having different diameters, said device comprising:

an outer shell comprising an optical window;

a first illumination source and an imager positioned behind an optical window, the imager imaging via the optical window and the first illumination source providing illumination via the optical window;

a second illumination source emitting light not via the optical window; and

a processor to determine the movement of the in-vivo device between a first lumen having a first diameter to a second lumen having a second diameter wherein the lumen walls are closer to the outer shell when the device is in one of the first lumen and the second lumen, based on the imager detecting less light in the lumen where the lumen walls are closer to the outer shell.

39. (new) The system according to claim 38, wherein the first diameter is a relatively small diameter lumen and wherein the second diameter is a larger diameter.

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40. (new) The system according to claim 38, comprising a controller, wherein said controller is configured to receive signals from said detector and to trigger an event to occur within said in-vivo device.
41. (new) The system according to claim 38 comprising a transmitter.
42. (new) The system according to claim 38, wherein the in-vivo device is a swallowable in-vivo device traversing the gastrointestinal tract and wherein the lumens are organs of the gastrointestinal tract.
43. (new) The system according to claim 38, wherein the second illumination source is placed at a location on said outer shell.